

WELLING. (J. C.)

*I just sent this up to you
do you want them for library?*

NOTES

ON THE

LIFE AND CHARACTER

OF

JOSEPH HENRY;

READ BEFORE THE

PHILOSOPHICAL SOCIETY OF WASHINGTON,

BY

JAMES C WELLING, ✓

OCTOBER 26TH, 1878.



[EXTRACTED FROM THE BULLETIN OF THE SOCIETY.]

PHILADELPHIA:
COLLINS, PRINTER, 705 JAYNE STREET.
1878.

NOTES
ON THE
LIFE AND CHARACTER
OF
JOSEPH HENRY;

READ BEFORE THE
PHILOSOPHICAL SOCIETY OF WASHINGTON,

BY
JAMES C. WELLING, ✓

OCTOBER 26TH, 1878.



[EXTRACTED FROM THE BULLETIN OF THE SOCIETY.]

PHILADELPHIA:
COLLINS, PRINTER, 705 JAYNE STREET.
1878.

PREFATORY NOTE.

PROF. HENRY, from the origin of the Philosophical Society of Washington, had been annually elected to the office of President by the unanimous vote of its members. Soon after his death the Executive Committee of the Society directed that the evening of October 26, 1878 (on which would occur the regular meeting immediately anterior to the annual meeting held for the election of officers), should be exclusively devoted to the celebration of his beautiful and beloved memory by the delivery of addresses descriptive of the life, character, and scientific labors of the illustrious deceased. Accordingly, Mr. James C. Welling and Mr. Wm. B. Taylor, Vice-Presidents of the Society, were appointed to prepare papers under this head—the former being designated to sketch the life and character of Prof. Henry, and the latter to review and appreciate the contributions made by him to science during his long, laborious, and useful career.

The reader will observe that this pamphlet retains the paging of the Society's Bulletin, from the stereotype plates of which it is printed.

LIFE AND CHARACTER

OF

JOSEPH HENRY.

JOSEPH HENRY was born in Albany, N. Y., on the 17th of December, 1799. His grandparents on both his father's and mother's side emigrated from Scotland, and landed in this country on the 16th of June, 1775, the day before the battle of Bunker's Hill. At the age of seven or earlier, for what reason is unknown, he went to live with his maternal grandmother, who resided at Galway, in the county of Saratoga, N. Y., and his father having died soon afterwards, he continued to dwell for years under her roof. At Galway he attended the district school, of which one Israel Phelps was the master, and having there learned how "to write and cipher, too," he was placed at the early age of ten in a store kept in the village by a Mr. Broderick. Receiving from his employer every token of kindness, and, indeed, of paternal interest in his welfare, the boy-clerk, already remarkable for his handsome visage, his slender figure, his delicate complexion, and his vivacious temper, became a great favorite with his comrades, who, according to the customs of the village store, were wont to saunter about the door in summer, and to gather round the stove in winter for the interchange of such trivial gossip as pertains to village life. Though released at this time for the half of each day from the duty of waiting in the store, that he might attend the sessions of the common school in the afternoon, it does not appear that he had as yet evinced any taste for books, notwithstanding the fact, as he afterwards recalled, that his young brain was even then troubled at times with the "malady of thought," as he lost himself in the mazes of revery or speculation about God and creation—"those obstinate questionings of sense and outward things," which the philosophical poet of England has

described as the natural misgivings of a "creature moving about in worlds not realized." "Delight and liberty," as was natural to a bright boy in the full flush of his animal spirits, still remained the simple creed of his childhood, until one day his pet rabbit escaped from its warren, and ran into an opening in the foundation of the village church. Finding the hole sufficiently large to admit of pushing his person through it, he followed on all fours in eager pursuit of the fugitive, when his eyes were attracted in a certain direction by a glimmer of light, and groping his way towards it, beneath the church, he discovered that it proceeded from a crevice which led into the vestibule of the building, and which opened immediately behind a bookcase that had been placed in the vestibule, as the depository of the village library. Working his way to the front of the bookcase, he found himself in the presence of all the literature stored on its shelves, and on his taking down the first book which struck his eye, it proved to be Brooke's *Fool of Quality*, a work of fiction in which views of practical life and traits of mystical piety are artfully blended, inasmuch that even John Wesley was inclined to except it from the *auto-da-fé*, which, after the manner of the curate and barber in the story of Don Quixote, he would have gladly performed upon the less edifying products of the novel-writing imagination. Poring over the pages of this fascinating volume, young Henry forgot the rabbit in quest of which he had crept beneath the church. It was the first book he had ever read with zest, because it was the first book he had ever read at the impulse of his "own sweet will." Mrs. Browning has told us that we get no good from a book by being ungenerous with it, by calculating profits—"so much help by so much reading."

——— "It is rather when
 We gloriously forget ourselves, and plunge
 Soul-forward, head-long, into a book's profound,
 Impassioned for its beauty and salt of truth—
 'Tis then we get the right good from a book."

Such was the "soul-forward, head-long plunge" which the boyish Henry now first took in the waters of romance, rendered only the sweeter to him, it may be, because, without affront to innocence, they took the flavor of "stolen waters" from the stealth with which they were imbibed. From that time forth he made frequent visits to this library, by the same tortuous and under-

ground passage, reading by preference only works of fiction, the contents of which he retailed to listening comrades around the stove by night, until, in the end, his patron, who shared in his taste for such "light reading," procured for him the right of access to the library in the regular way, and no longer by the narrow fissure in the rear of the bookcase.

At the age of fifteen he left the store of Mr. Broderick in Galway, and, returning to the place of his birth, entered a watch-maker's establishment in Albany, but finding nothing congenial to his taste in the new pursuit, he soon abandoned it. At this time he had formed a strong predilection for the stage. Two or three years before, while living at Galway, he had seen a play for the first time, on the occasion of a casual visit to Albany, and the impression it made upon his mind was as vivid as that left by the perusal of his first novel. He described and re-enacted its scenes for the wonderment of the Galway youth, and now that he was living in Albany, he could give full vent to his new inclination. His spare money was all spent in theatrical amusements, until at length he won his way behind the scenes, and procured admission to the green room, where he learned how to put a play on the boards, and how to produce the illusion of stage effects. In the skill with which he learned thus early to handle the apparatus of the stage, we may discern, perhaps, the first faint prelude of the skill to which he subsequently attained in handling the "levers and screws" with which, according to Goethe, the experimental philosopher seeks to extort from nature the revelation of her mysteries.

Invited at this period of his life to join a private theatrical association in Albany, known by the name of "The Rostrum," the young enthusiast soon distinguished himself among his fellow-members of riper years by the ingenuity of his dramatic combinations, and the felicity of his scenic effects, insomuch that he was made President of the Society. Meanwhile, the watch-maker had left Albany, and young Henry, no longer having the fear of the silversmith's file and crucible before his eyes, was left free to follow the lead of his dramatic tastes and aspirations. He dramatized a tale, and prepared a comedy; both of which were acted by the association. Indeed, so much was he absorbed in this new vocation, that our amateur Roscius seemed, according to all outward appearance, in a fair way of making a place for

himself among the "periwig-pated fellows who tear a passion to tatters" on the stage; or, at the best, of taking rank with the great dramatic artists who, standing in front of the garish foot-lights, "hold the mirror up to nature," in a sense far different from that of the experimental philosopher, standing in the clear beams of that *lumen siccum* which Bacon has praised as the light that is best of all for the eyes of the mind. But in the midst of these "unintelligible dumb shows," under which the unique and original genius of Henry had thus far seemed to be masquerading, we have now come to the time when his mind underwent a great transfiguration, which revealed its native brightness, and a transfiguration as sudden as it was great.

Minds richly endowed, if started at first on a wrong track, may sometimes have, it would seem, an intellectual conversion as marked as that moral conversion which is often visible in the lives of great saints. It certainly was so in the case of Henry. Overtaken in the sixteenth year of his age by a slight accident, which detained him for a season within doors, he chanced, in search of mental diversion, to cast his eyes upon a book which a Scotch gentleman, boarding with his mother, had left upon the table in his chamber. It was Dr. Gregory's *Lectures on Experimental Philosophy, Astronomy, and Chemistry*. It commences with an address to the young reader, in which the author stimulates him to deeper inquiry concerning the familiar objects around him. "You throw a stone," he says, "or shoot an arrow upwards into the air; why does it not go forward in the air, and in the direction you give it? What force is it that presses it down to the earth? Why does flame or smoke always mount upward? You look into a clear well of water, and see your own face and figure, as if painted there; why is this? You are told it is done by reflection of light. But what is reflection of light?" etc. etc. These queries certainly are very far from representing the *prudens quæstio* of Bacon in even its most elementary form, but they opened to the mind of young Henry an entirely "new world of thought and enjoyment." His attention was enchained by this book as it had not been enchained by the fiction of Brooke, or by the phantasmagoria of the drama.* The book did for him

* He soon became so much interested in this book that its owner gave it to him, and in token of the epoch it had marked in his life, Prof. Henry ever afterwards preserved it among the choicest memorials of his boy-

what the spirits did for Faust when they opened his eyes to see the sign of the macrocosm, and summoned him "to unveil the powers of nature lying all around him." Not more effectual was the call which came to St. Augustine, when, as he lay beneath the shadow of the fig-tree, weeping in the bitterness of a contrite soul, he seemed to hear a voice that said to him: "*Tolle, lege; tolle, lege,*" and at the sound of which he turned away forever from the Ten Predicaments of Aristotle, and all the books of the rhetoricians, to follow what seemed to him the "lively oracles of God." No sooner had Henry recovered from his sickness, than, obedient to the new vision of life and duty which had dawned upon him, he summoned his comrades of "the Rostrum" to meet him in conference, formally resigned the office of President, and, in a valedictory address, announced to his associates that, subordinating the pleasures of literature to the acquisition of serious knowledge, he had determined henceforth to consecrate his life to arduous and solid studies.

There are doubtless those who, in the retrospect of Prof. Henry's youth, as contrasted with the rich flower and fruitage of his riper years, will please themselves with curious speculations on what "might have been," if his rabbit had never slipped its inclosure, if there had been no crack in the wall behind the book-case, or if Gregory's Lectures had never fallen in his way at the critical juncture of his life, much as the great mind of Pascal pleased itself with musing how the fate of Europe might have been changed if the Providential grain of sand in Cromwell's tissue had not sent him to a premature grave; or how the whole face of the earth would have been changed if the nose of Cleopatra had been a little shorter than it was, and so had marred the beauty of face which made her, like another Helen, the *teterrima causa*

hood. In the fly-leaf of the book the following memorandum is found, written by Prof. H. in the year 1837: This book, although by no means a profound work, has, under Providence, exerted a remarkable influence on my life. It accidentally fell into my hands when I was about sixteen years old, and was the first book, with the exception of works of fiction, that I ever read with attention. It opened to me a new world of thought and enjoyment, invested things before almost unnoticed with the highest interest, fixed my mind on the study of nature, and caused me to resolve at the time of reading it that I would devote my life to the acquisition of knowledge. —JOSEPH HENRY.

belli for a whole generation. Such fanciful speculations, it seems to me, are well calculated to import into the philosophy of human life, and into the philosophy of human history, a theory of causation which is as superficial as it is false. As honest Horatio says to Hamlet in the play, when the latter proposes to trace the noble dust of Alexander the Great, in imagination, until perchance it may be found stopping a bung-hole, I feel like saying in the presence of such fine-spun speculations, "Twere to consider too curiously to consider so." The strong intellectual forces which are organic in a great mind, as the strong moral and political forces which are organic in society, do not depend for their evolution, or for their grand cyclical movements, on the casual vicissitudes which ripple the surface of human life and affairs. To argue in this wise is to mistake occasion for cause, and by confounding what is transient and incidental with what is permanent and pervasive, is to make the noblest life, with its destined ends and ways, the mere creature of accident, and is to convert human history, with its great secular developments, into the fortuitous rattle and chance combinations of the kaleidoscope. We may be sure that Henry was too great a man to have lived and died without making his mark on the age in which his lot was cast, whatever should have been the time, place, or circumstance which was to disclose the color and complexion of his destiny. The strong, clear mind, like the crystal, takes its shape and pressure from the play of the constituent forces within it, and is not the sport of casual influences that come from without.

Armed, however, with his new enthusiasm, the nascent philosopher hastened to join a night school in Albany, but soon exhausted the lore of its master. Encountering next a peripatetic teacher of English grammar, he became, under the pedagogue's drill, so versed in the arts of orthography, etymology, syntax, and prosody, that he started out himself on a grammatical tour through the provincial districts of New York, and returning from this first field of his triumphs as a teacher, he entered the Albany Academy (then in charge of Dr. T. Romeyn Beck) as a pupil in its more advanced studies. Meanwhile, in order to "pay his way" in the academy, he sought employment as a teacher in a neighboring district school, this being, as he afterwards was wont to say, the only office he had ever sought in his life; and in this office he succeeded so well that his salary was raised from \$8

for the first month to the munificent sum of \$15 for the second month of his service! From pupil in the academy and teacher of the district school, he was soon promoted to the rank of assistant in the academy, and henceforward had ample means for the further prosecution of his studies. Leaving the academy, he next accepted the post of private tutor in the family of the Patroon in Albany, Mr. S. Van Rensselaer; and, devoting his leisure hours to the study of the higher mathematics, in conjunction with chemistry, physiology, and anatomy, he at this time purposed to enter the medical profession, and had made some advances in this direction, when he was called, in the year 1826, to embark in a surveying expedition, set on foot under the auspices of the State government of New York, for the purpose of laying out a road through the southern tier of counties in that State. Starting with his men at West Point, and going through the woods to Lake Erie, he acquitted himself so well in this expedition that his friends endeavored to procure for him a permanent appointment as captain of an engineering corps, which it was proposed to create for the prosecution of other internal improvement schemes, but the bill projected for this purpose having fallen through, Mr. Henry again accepted, though with some reluctance, a vacant chair which was offered him in the Albany Academy.

In connection with the duties of this chair, he now commenced a series of original experiments in natural philosophy—the first connected series which had been prosecuted in this country. Dr. Hare, indeed, had already invented the compound blowpipe, as Franklin before him, by his brilliant but desultory labors, had given an immense impulse to the science of electricity; yet none the less is it true that regular and systematic investigations, designed to push forward the boundaries of knowledge, abreast with the scientific workers of Europe, had hardly been attempted at that era in the United States.

The achievements of Henry in this direction soon began to win for him an increase of reputation as well as an increase of knowledge; but in the midst of the fervors which had come to quicken his genius, he was visited by the fancy (or was it a fact?) that a few of the friends who had hitherto supported him in his high ambition were now beginning to look a little less warmly on his aspirations. Suffering from this source the mental

depression which was natural to a sensitive spirit, no less remarkable for its modesty than for its merit, he found solace in the friendly words of good cheer and hopefulness addressed to him by Mr. William Dunlap.* While one day making, with Mr. Henry, a trip down the Hudson River, on board the same steamboat, Mr. Dunlap observed in the young teacher's face the marks of sadness, and, on learning its cause, he laid his hand affectionately on Henry's shoulder, and closed some reassuring advice with the prophetic words, "Albany will one day be proud of her son." The presage was destined to be abundantly confirmed. Soon afterwards came the call to Princeton College, and, because of the wider career it opened to him, the call was as grateful to Henry as its acceptance was gratifying to the friends of that institution. And shortly before this promotion, a new happiness had come to crown his life in his marriage to the excellent lady who still survives him.

He entered upon the duties of his new post in the month of November, 1832, and bringing with him a budding reputation, which soon blossomed into the highest scientific fame, he became the pride and ornament of the Princeton Faculty. The prestige of his magnets attracted students from all parts of the country; but the magnetism of the man was better far than any work of his cunning hand or fertile brain. It was in Princeton, as he was afterwards wont to say, that he spent the happiest days of his life, and they were also among the most fruitful in scientific discovery. Leaving the record of his particular achievements at this epoch to be told by Mr. Taylor, who is so well qualified to do them justice, I beg leave only to refer to this period in the career of Prof. Henry as that in which it was my good fortune to come, for the first time, under the personal influence of the great philosophical scholar, who, after being my teacher in science during the days of my college novitiate at Princeton, continued during the whole of his subsequent life to honor me with a friendship which was as much my support in every emergency that called for counsel and guidance, as it was at all times my joy and the crown of my rejoicing.

* This Mr. Dunlap had been the manager of the Park Theatre in New York, and combined with his dramatic vocation the pursuits of literature and the painter's art. He wrote the "History of Arts and Designs in the United States," a work which was esteemed a standard one at the date of its first publication in 1834.

In the year 1847, when Prof. Henry was in the forty-eighth year of his age, he was unanimously elected by the Regents of the Smithsonian Institution as its Secretary, or Director. At that time the institution existed only in name, under the organic act passed by Congress for its incorporation, in order to give effect to the bequest of James Smithson, Esquire, of London, who by his last will and testament had given the whole of his property to the United States, to found at Washington, under the name of the "Smithsonian Institution," an establishment for "the increase and diffusion of knowledge among men." It does not need to be said that Prof. Henry did not seek this appointment. It came to him unsolicited, but it came to him from the Board of Regents, not only by the free choice of its members, but also at the suggestion and with the approval of European men of science, like Sir David Brewster, Faraday, and Arago, as also of American scientific men, like Bache and Silliman and Hare. I well remember to have heard the late Geo. M. Dallas (a member of the constituent Board of Regents, by virtue of his office as Vice-President of the United States), make the remark on a public occasion, immediately after the election of Prof. Henry as Director of the Smithsonian Institution, that the Board had not had the slightest hesitation in tendering the appointment to him "as being peerless among the recognized heads of American science."

At the invitation of the Regents he drew up an outline plan of the Institution, and the plan was adopted by them on the 13th of December, 1847. The members of this Society, living, as they do, beneath the shadow of the great institution to which Smithson worthily gave his name and his estate, but of which Henry was at once the organizing brain and the directing hand from the date of its inception down to the day of his death, do not need that I should sketch for them the theory on which it was projected by its first Secretary, or that I should rehearse in detail the long chronicle of the useful and multiform services which in pursuit of that theory it has rendered to the cause of science and of human progress. And, moreover, in doing so I should here again imprudently trench on the province assigned to my learned colleague. But I may be allowed to portray the method and spirit which he brought to the duties of this exacting post, at least so far as to say that he proved himself as great in administration as he was great in original research; as skilful in

directing the scientific labors of others as he was skilful in the conduct of his own. Seizing, as with an intuitive eye, the peculiar genius of an institution which was appointed to "*increase knowledge*" and to "*diffuse*" it "*among men*," he touched the springs of scientific inquiry at a thousand points in the wide domain of modern thought, and made the results of that inquiry accessible to all, with a catholicity as broad as the civilized world. And the publications of the Smithsonian Institution, valuable as they are, and replete as they are with contributions to human knowledge, represent the least part of his manifold labors in connection with the Institution. His correspondence was immense, covering the whole field of existing knowledge, and ranging, in the persons addressed, from the genuine scientific scholar in all parts of the world, to the last putative discoverer of perpetual motion, or the last embryo mathematician who supposed himself to have squared the circle.

In accepting a post where he was called by virtue of his office to fecundate the labors of other men rather than his own, Prof. Henry distinctly saw that he was renouncing for himself the paths of scientific glory on which he had entered so auspiciously at Albany and Princeton. He once said to me, in one of the self-revealing moods in which he sometimes unbosomed himself to his intimate friends, that in accepting the office of Smithsonian Secretary he was conscious that he had "*sacrificed future fame to present reputation.*" He was in the habit of recalling that Newton had made no discoveries after he was appointed Warden of the Mint in 1695,* and I believe that the remark is historically accurate, unless we should incline with Biot, against the better opinion of Sir David Brewster, to place after that date the "*discoveries*" which Newton supposed himself to have made in the Scriptural chronology and in the interpretation of the Apocalypse—discoveries which, whenever made, provoked the theological scoff, as they perhaps deserved the theological criticism of

* The effect of the Wardenship on Newton's scientific labors may be seen in the warmth with which he rebuked Flamsteed for purposing to publish, in 1698, the fact that Newton was then engaged on a revision of the Horroxian theory of the moon. Newton wrote: "I do not love to be printed on every occasion, much less to be dunned and teased by foreigners about mathematical things, or to be thought by our own people to be trifling away my time when I should be about the King's business."

the polemical Bishop Warburton. Yet, having convinced himself that it was a duty which he owed to the cause of science, to sink his own personality in the impersonal institution he was called to conduct, Henry never paused for an instant to confer with flesh and blood, but moved "right onward" in the path of duty, with only the more of steadfastness, because he felt that it was for him a path of sacrifice.

How sedulously he strove to maintain the Institution in the high vocation to which he believed it was appointed no less by a sacred regard for the will of its founder than by an intelligent zeal for the promotion of human welfare, is known to you all. And the success with which he resisted all schemes for the impoverishment of the exalted function it was fitted to perform in the service of abstract science, is a tribute at once to his rare executive skill, and to the native force of character which made him a tower of strength against the clamors of popular ignorance and the assaults of charlatanism. Whatever might be the consequences to himself personally, he was determined to magnify *its* vocation and make *it* honorable. And hence I do not permit myself to doubt that during the long period of his administration, as Secretary of the Smithsonian Institution, covering a period of thirty years, he has impressed upon its conduct a definite direction which his successors will be proud to maintain, not simply in reverence for the memory of their illustrious predecessor, but also in grateful recognition of the fruitful works which, in the pursuit of his enlightened plans, will continue to follow him now that he has rested from his labors.

The rest into which he has entered came to him in a green old age, after a life as full of years as it was full of honors. He was not only blest with an old age which was

—— serene and bright,
And lovely as a Lapland night,

but he also had that which, according to the great dramatist, should accompany old age—"As honor, love, obedience, troops of friends." And the manner of his death was in perfect keeping with the manner of his life. Assured for months before the inevitable hour came that his days on earth were numbered, he made no change in his daily official employments, no change in his social and literary diversions. None was needed. Surprise, I learn, has been expressed that in the full prospect of death he

should have "talked" so little about it. But the surprise is quite unfounded. Prof. Henry was little in the habit of talking about himself at any time. Yet to his intimate friends he spoke freely and calmly about his approaching end. Two weeks before he died he said to one such, a gentleman from New York, to whom he was strongly attached: "I may die at any moment. I would like to live long enough to complete some things I have undertaken, but I am content to go. I have had a happy life, and I hope I have been able to do some good." In an hour's conversation which I had with him, six days before he died, he referred to the imminence of his death with the same philosophic and Christian composure. And perfectly aware as he was, on the day before he died, and on the day of his death, that he had already entered the Dark Valley, he feared no evil as he looked across it, but, poised in a sweet serenity, preserved his soul in patience, at an equal remove from rapture on the one hand, or anything like dismay on the other. For his friends he had even then the same benignant smile, the same warm pressure of the hand, and the same affable converse as of yore. With the astronomer, Newcomb, he pleasantly and intelligently discoursed about the then recent transit of Mercury—not unheedful of the great transit he was making, but giving heed none the less to every opportunity for the inquiry of truth. Towards the attendants watching around his couch he was as observant as ever of all the "small sweet courtesies" which marked consideration for others rather than for himself even in the supreme moment of his dissolution. The disciples of Socrates recalled with a sort of pathetic wonder at the calm and intrepid spirit of their dying master, that as the chill of the fatal hemlock was stealing towards his heart, he uncovered his face to ask that Crito should acquit him of a small debt he owed to Esculapius; and so in like manner I recall that our beloved chief did not forget in the hour of his last agony to make provision for the due despatch of a letter of courtesy, which on the day before he had promised to a British stranger.

And so in the full possession of all his great mental powers—in his waking hours filled with high thoughts and with a peace which passed all understanding; in his sleep stealing away

"To dreamful wastes where footless fancies dwell,"

and talking even there of experiments in sound on board the

steamer Mistletoe, or haply taking note of electric charges sent through imaginary wires at his bidding*—the soul of Joseph Henry passed away from the earth which he had blessed and brightened by his presence. He died ten minutes after twelve o'clock, on the 13th of May, 1878.

From these imperfect notes on the Life of Prof. Henry, I pass to consider some of his traits and characteristics as a man.

He was endowed with a physical organization in which the elements that composed it were not only fine and finely mixed, but were cast in a mould remarkable for its symmetry and manly beauty. The perfection of his "outward man" was not unworthy of the "inward man" whom it enshrined, and if, as a church father has phrased it, "the human soul is the true Shechinah," it may none the less be said that these "fleshy nooks" of ours never appear to so much advantage as when, transfigured by this Shechinah, they offer to the informing spirit a temple which is as stately as it is pure. When Dr. Bentley was called to write the epitaph of Cotes (that brilliant scholar of whom Newton said that, "if he had lived we might have known something"), the accomplished master of words thought it not unmeet to record that the fallen Professor, who had been snatched away by a premature death, was only "the more attractive and lovely because the virtues and graces which he joined to the highest repute for learning were embellished by a handsome person." The same tribute of admiration might be paid with equal justice to the revered Professor whose "good gray head" has just vanished from our sight.

The fascination of Prof. Henry's manner was felt by all who came within the range of its influence—by men with whom he daily consorted in business, in college halls, and in the scientific academy; by brilliant women of society who, in his gracious presence, owned the spell of a masculine mind which none the less was feminine in the delicacy of its perceptions and the purity of

* Prof. Henry took great delight in the acoustical researches which, during the closing years of his life, he made at sea, on board the steamer Mistletoe, while it was in electricity that he won his first triumphs as a scientific man. That his first love and last passion in science still filled his thoughts in his dying moments was attested by the words which even then fell from his lips, in sleep.

its sensibilities; by children, who saw in the simplicity of his unspoiled nature a geniality and a kindness which were akin to their own. A French thinker has said that *à mesure qu'on a plus d'esprit on trouve qu'il y a plus d'hommes originaux*. It was the breadth and catholicity of Henry's intelligence which enabled him to find something unique and characteristic in persons who were flat, stale, and unprofitable to the average mind.

Gifted with a mental constitution which was "feelingly alive to each fine impulse," he possessed a high degree of æsthetic sensibility to the beautiful in nature and in art. It cannot be doubted that a too exclusive addiction to the analytic and microscopic study of nature, at the instance of science, has a tendency to blunt in some minds a delicate perception for the "large livingness" of Nature, considered as a source of poetic and moral inspiration, but no such tendency could be discovered in the intellectual habitudes of Prof. Henry. To a mind long nurtured by arts of close and critical inquiry into the logic of natural law he none the less united a heart which was ever ready to leap with joy at "the wonder and bloom of the world." When on the occasion of his first visit to England, in the year 1837, he was travelling by night in a stage-coach through Salisbury Plain, he hired the driver to stop, while all his fellow-passengers were asleep, that he might have the privilege of inspecting the ruins of Stonehenge, as seen by moonlight, and brought away a weird "sense of mystery" which followed him in all his after life. At a later day, in the year 1870, after visiting the Aar Glacier, the scene of Prof. Agassiz's well-known labors, he crossed over the mountain to the Rhone Valley, until, at a sudden turn of the road, he came full in the presence of the majestic Glacier of the Rhone. For minutes he stood silent and motionless; then, turning to the daughter who stood by his side, he exclaimed, with the tears running down his cheeks: "This is a place to die in. We should go no further."

And as he rejoiced in natural scenery so also was he charmed with the beauties of art, whether as seen in "the well-stained canvas or the featured stone," and hence it was that he felt as much at home in the *atelier* of the painter or sculptor as in the laboratory of the chemist or the apparatus room of the natural philosopher, and exulted as sincerely in the Louvre or the Corcoran Gallery of Art as in the cabinet of the mineralogist or the museum of the naturalist.

He was as remarkable for the simplicity of his nature as for the breadth of his mind and the acumen of his intellect. Those who analyze the nature and charm of simplicity in a great mind suppose themselves to find the secret of both in the fact that simplicity, allied with greatness, works its marvels with a sweet unconsciousness of its own superior excellence, and it works them with this unconsciousness because it is greater than it knows. Talent does what it can. Genius does what it must. And in this respect, as an English writer has said, there is a great analogy between the highest goodness and the highest genius; for under the influence of either, the spirit of man, "whenever it lifts up its head and shakes its locks," may scatter light and splendor around it, without admiring itself or seeking the admiration of others. And it was in this sense that the simplicity of Henry's nature expressed itself in acts of goodness and in acts of high intelligence, with a spontaneity which hid from himself the transcendent virtue and dignity of the work he was doing; and hence all his work was done without the slightest taint of vanity or tarnish of self-complacency.

As might be expected, he was a fervent lover of the best literature. His acquaintance with the English poets was not only wide but intimate. His memory was stored with choice passages, didactic, sentimental, witty, and humorous, which he reproduced at will on occasions when they were apt to his purpose. His familiarity with fiction dated, as we have seen, from early boyhood, and in this fountain of the imagination he continued to find refreshment for the "wear and tear" of the hard and continuous thought to which he was addicted in the philosopher's study. His knowledge of history was accurate, and it was not simply a knowledge of facts, but a knowledge of facts as seen in the logical coherence and rational explanation which make them the basis of historic generalization. The genesis of the Greek civilization was a perpetual object of interest to his speculative mind, as called to deal with the phenomena of Grecian literature, art, philosophy, and polity.

He was a terse and forcible writer. If, as some have said, it is the perfection of style to be colorless, the style of Henry might be likened to the purest amber, which, invisible itself, holds in clear relief every object it envelops. Without having that fluent delivery which, according to the well-known comparison

of Dean Swift, is rarely characteristic of the fullest minds, he was none the less a pleasing and effective speaker—the more effective because his words never outran his thought. We loved to think and speak of him as “the Nestor of American Science,” and if his speech, like Nestor’s, “flowed sweeter than honey,” it was due to the excellent quality of the matter rather than to any rhetorical facility of manner.

He was blest with a happy temperament. He recorded in his diary, as a matter of thanksgiving, that through the kindness of Providence he was able to forget what had been painful in his past experiences, and to remember only and enjoy that which had been pleasurable. The same sentiment is expressed in one of his letters. Armed with this sunny temper which, like the dial, “marks only the hours that shine,” he was in his family circle a perpetual benediction. And, in turn, he was greatly dependent on his family for the sympathy and watch-care due in a thousand small things to one who never “lost the child-like in the larger mind.” His domestic affections were not dwarfed by the exacting nature of his official duties, his public cares, or his scientific vigils. He had none of that solitary grandeur affected by isolated spirits who cannot descend to the tears and smiles of this common world. He was never so happy as when in his home he was communing with wife and children around the family altar. He made them the confidants of all his plans. He rehearsed to them his scientific experiments. He reported to them the record of each day’s adventures. He read with them his favorite authors.* He entered with a gleeful spirit

* The following extract from a diary, kept by one of his daughters, is descriptive of his habits under this head: “Had father with us all the evening. I modelled his profile in clay while he read Thomson’s Seasons to us. In the earlier part of the evening he seemed restless and depressed, but the influence of the poet drove away the cloud, and then an expression of almost childlike sweetness rested on his lips, singularly in contrast yet beautifully in harmony with the intellect of the brow above.”

Or take this extract from the same diary: “We were all up until a late hour, reading poetry with father and mother, father being the reader. He attempted ‘Cowper’s Grave,’ by Mrs. Browning, but was too tender-hearted to finish the reading of it. We then laughed over the Address to the Mummy, soared to heaven with Shelley’s Skylark, roamed the forest with Bryant, culled flowers from other poetical fields, and ended with Tam O’Shanter. I took for my task to recite a part of the latter from memory, while father corrected, as if he were ‘playing schoolmaster.’”

into all their joys; with a sympathetic heart into all their sorrows. And while thus faithful to the charities of home, he was intensely loyal to his friends, and found in their society the very cordial of life. Gracious to all, he grappled some of them to his heart with hooks of steel. The friendship, fed by a kindred love of elegant letters, which still lends its mellow lustre to the names of Cicero and Atticus, was not more beautiful than the friendship, fed by kindred talents, kindred virtues, and kindred pursuits, which so long united the late Dr. Bache and Professor Henry in the bonds of a sacred brotherhood. And this was but one of the many similar intimacies which came to embellish his long and useful career.

His sense of honor was delicate in the extreme. It was not only that "chastity of honor which feels a stain like a wound," but at the very suggestion of a stain it recoiled as instantly as the index finger of Mr. Edison's tasimeter at the "suspicion" of heat. I met him in 1847, when, soon after his election as Secretary of the Smithsonian Institution, he had just been chosen to succeed Dr. Hare as Professor of Chemistry in the Medical Department of the University of Pennsylvania, at a salary double that which he was to receive in Washington, and with half the year open to free scientific investigation, because free from professorial duties. It was, he said, the post which, of all others, he could have desiderated at that epoch in his scientific life, but his honor, he added, forbade him to entertain, for a moment, the proposition of accepting it after the obligations under which he had come to the interests represented by the Smithsonian Institution. At a later day, after he had entered on his duties in Washington, and found the position environed with many difficulties, Mr. Calhoun came to him, and urged his acceptance of a lucrative chair in a Southern College, using as a ground of appeal the infelicities of his present post, and the prospect of failing at last to realize the high designs he had projected for the management of the Smithsonian Institution. Admitting that it might be greatly to his comfort and advantage at that time to give up the Smithsonian, he declined at once to consider the proposal made to him, on the ground that his "honor was committed to the Institution." Whereupon Mr. Calhoun seized his hand, and exclaimed, "Professor Henry, you are a man after my own heart."

When in 1853, and again in 1867, he was entreated to accept the Presidency of Princeton College, the College of his love, and the scene of his "happiest days," he instantly turned away from the lure, as feeling that he could not love the dear old College so much if he loved not more the honor and duty which bound him to the establishment in Washington, with which, for good or for evil, he had wedded his name and fortune. And in all other concerns, from the greatest to the least, he seemed like one

"Intent each lurking frailty to disclaim,
And guard the way of life from all offence,
Suffered or done."

The "Man of Ross," portrayed by the pencil of Pope, was not more benevolent in heart or act than Professor Henry. His bounty was large and free. The full soul mantled in his eyes at every tale of woe, and the generous hand was quick to obey the charitable impulses of his sympathetic nature. This benevolent spirit ran like a silver cord through the tissue of his life, because it was interwoven in the very warp and woof of his being, and because it was kept in constant exercise. It appeared not only in acts of kindness to the poor and afflicted, but interpenetrated his whole demeanor, and informed all his conduct wherever he could be helpful to a fellow-man. He did good to all as he had opportunity, from "the forlorn and shipwrecked brother," who had already failed in the voyage of life, to the adventurous young mariner who sought his counsel and guidance for the successful launching of his ship from its ways. Many are the young men, who, in all parts of the land, could rise up to-day and call him blessed, for the blessing he brought to them by the kind word spoken and the kind deed done, each in its season.

Unselfishness was a fundamental trait in the character of Professor Henry, and he made the same trait a fundamental one in his conception of the philosopher's high calling. The work of scientific inquiry was with him a labor of love, not simply because he loved the labor, but because he hoped by it to advance the cause of truth and promote the welfare of man. He never dreamed of profiting by any discovery he made. He would not even have his salary increased, so tenaciously did he hold to the Christ-like privilege of living among men "as one that serveth." This was a crown which he would let no man take from him. To the

Government he freely gave, in many spheres of public usefulness, all the time he could spare from his official duties. And it was in one of these subsidiary public labors, as Chairman of the Light-House Board, that he contracted, as he believed, the disease which carried him to the grave.

A sense of rectitude presided over all his thoughts and acts. He had so trained his mind to right thinking, and his will to right feeling and right doing, that this absolute rectitude became a part of his intellectual as well as moral nature. Hence in his methods of philosophizing he was incapable of sophistical reasoning. He sat at the feet of nature with as much of candor as of humility, never importing into his observations "the human being's pride," or the "mystical predominance" of an overweening fancy. He was sober in his judgments. He made no hasty generalizations. His mind seemed to turn on "the poles of truth."

I could not dwell with enough of emphasis on this crowning grace of our beloved friend if I should seek to do full justice to my conception of the completeness it gave to his beautiful character. But happily for me I need dwell upon it with only the less of emphasis because it was the quality which, to use a French idiom, "leaped into the eyes" of all who marked his walk and conversation. In the crystal depths of a nature like his, transparent in all directions, we discern as well the felicity as the beauty of that habit of mind which is begotten by the supreme love of Truth for her own sake—a habit which is as much the condition of intellectual earnestness, thoroughness, and veracity in penetrating to the reality of things, as of moral honesty, frankness, sincerity, and truthfulness in dealing with our fellow-men. The great expounder of the Nicomachean Ethics has taught us, and one of our own moralists has amplified the golden thesis,* that high moral virtue implies the habit of "just election" between right and wrong, and that to attain this habit we need at once an intelligence which is impassioned and an appetite which is reflective. And so in like manner all high intellectual virtue implies a habit of just election between truth and error—an election which men make, other things being equal, according to the degree in which their minds are enamored with the beauty of truth, as also in proportion to the degree in which their appetencies for knowl-

* Dr. James H. Thornwell: Discourses on Truth.

edge have been trained to be reflective and cautious against the enticements of error. I never knew a man who strove more earnestly than Henry to make this just election between right and wrong, between truth and error, or who was better equipped with a native faculty for making the wise choice between them. He had brought his whole nature under the dominion of truthfulness.

But while thus eager and honest in the pursuit of truth he had nothing controversial in his temper. It was a favorite doctrine of his that error of opinion could be most successfully combated, not by the negative processes of direct attack, rousing the pride and provoking the contumacy of its adherents, but rather by the affirmative process of teaching, in meekness and love, the truth that is naturally antagonistic to it. The King of Sweden and Norway made him a Knight of St. Olaf, but St. Olaf's thunderous way of propagating Christianity—by battering down the idols of Norway with Thor's own hammer—is not the way that his American votary would have selected. There was nothing iconoclastic in Henry's zeal for truth. He believed that there is in all truth a self-evidencing quality, and a redemptive power which makes it at once a potent and a remedial force in the world. Hence he never descended to any of those controversies which, in the annals of science, have sometimes made the *odium scientificum* a species of hatred quite as distinct, and quite as lively, too, as its more ancient congener, the *odium theologicum*. When once it was sought to *force* a controversy of this kind upon him, and when accusations were made which seemed to affect his personal honor, as well as the genuineness of his scientific claims, he referred the matter for adjudication to the Regents of the Smithsonian. Their investigation and their report dispensed him from the necessity of self-defence. The simple truth was his sufficient buckler. And this equanimity was not simply the result of temperament. It sprang from the largeness of his mind, as well as from the serious view he took of life and duty. He was able to moderate his own opinions, because, in the amplitude of his intellectual powers, he was able to be a moderator of opinions in the scientific world. You all know with what felicity and intellectual sympathy he presided over the deliberations of this Society, composed as it is of independent scientific workers in almost every department of modern research. Alike in the judicial temper of

his mind and in the wide range of his acquisitions he was fitted to be, as Dante has said of Aristotle, "the master of those who know."

And this power of his mind to assimilate knowledge of various kinds naturally leads me to speak of his skill in imparting it. He was a most successful educator. He had many other titles of honor or office, but the title of *Professor* seemed to rank them all, for everybody felt that he moved among men like one anointed with the spirit and power of a great teacher. And he had philosophical views of education, extending from its primary forms to its highest culminations—from the discipline of the "doing faculties" in childhood, to the discipline of the "thinking faculties" in youth and manhood. No student of his left the Albany Academy, in the earlier period of his connection with that institution, without being thoroughly drilled in the useful art of handling figures, for then and there he taught the rudimental forms of arithmetic, not so much by theory as by practice. No student of his left Princeton College without being thoroughly drilled in the art of thinking, as applied to scientific problems, for then and there he was called to indoctrinate his pupils in the rationale as well as in the results of the inductive method. And I will venture to add that no intelligent student of his at Princeton ever failed, in after life, to recognize the useful place which hypothesis holds in labors directed to the extension of science, or failed to discriminate between a working hypothesis and a perfected theory.

Pausing for a moment at this stage in the analysis of Professor Henry's mental and moral traits, I cannot omit to portray the effect produced on the observer by the happy combination under which these traits were so grouped and confederated in his person as to be mutual complements of each other. Far more significant than any single quality of his mind, remarkable as some of his qualities were, was the admirable equipoise which kept the forces of his nature from all interference with the normal development of an integral manhood. He was courtly in his manners, but it was the courtliness which springs from "high thoughts seated in a heart of courtesy," and had no trace of affectation or artificiality; He was fastidious in his literary and artistic tastes, but he had none of that dilettantism which is "fine by defect and delicately weak;" he was imbued with a simplicity of heart

which left him absolutely without guile, yet he was shrewd to protect himself against the arts of the designing; he was severe in his sense of honor without being censorious; he was benevolent yet inflexibly just; quick in perception yet calm in judgment and patient of labor; tenacious of right without being controversial; benignant in his moral opinions yet never selling the truth; endowed with a strong imagination yet evermore making it the handmaid of his reason; a prince among men yet without the slightest alloy of arrogance in the fine gold of his imperial intellect; in a word, good in all his greatness, he was, at the same time, great in all his goodness. Such are the limitations of human excellence in most of its mortal exhibitions that transcendent powers of mind, or magnificent displays of virtue exerted in a single direction, are often found to owe their "splendid enormity" to what Isaac Taylor has called "the spoliation of some spurned and forgotten qualities," which are sacrificed in the pursuit of a predominant taste, or an overmastering ambition.* The "infirmities of genius" often attest in their subjects the presence of a mental or moral atrophy, which has hindered the full-orbed development of one or more among their mental and moral powers. But in Professor Henry no one quality of mind or heart seemed to be in excess or deficiency as compared with the rest. All were fused together into a compactness of structure and homogeneity of parts which gave to each the strength and grace imparted by an organic union. And hence, while he was great as a philosopher he was greater as a man, for, laying as he did all the services of his scientific life on the altar of a pure, complete, and dignified manhood, we must hold that the altar which sanctified his gifts was greater than even the costliest offerings he laid upon it.

It will not be expected that I should close this paper without referring to the religious life and opinions of Prof. Henry. If in moral height and beauty he stood like the palm tree, tall, erect, and symmetrical, it is because a deep religious faith was the tap-root of his character. He was, on what he conceived to be

* The phrase, as originally applied by Taylor, is descriptive of certain incomplete ethical systems, but it is equally applicable to certain typical exemplifications of human character, in which "the strength and the materials of six parts of morality have been brought together wherewith to construct a seventh part."

rational grounds, a thorough believer in theism. I do not think he would have said, with Bacon, that he "had rather believe all the fables in the Legend, the Talmud, and the Alcoran, than that this universal frame is without a mind," for he would have held that in questions of this kind we should ask not what we would "rather believe," but what seems to be true on the best evidence before us. He was in the habit of saying that, next to the belief in his own existence, was his belief in the existence of other minds like his own, and from these fixed, indisputable points, he reasoned, by analogy, to the conclusion that there is an Almighty Mind pervading the universe. But when from the likeness between this Infinite Mind and the finite minds made in His image, it was sought, by *a priori* logic, or by any preconceived notions of man, to *infer* the methods of the Divine working, or the final causes of things, he suspected at once the intrusive presence of a false, as well as presumptuous, philosophism, and declined to yield his mind an easy prey to its blandishments. To his eyes much of the free and easy teleology, with which an under-wise and not over-reverent sciolism is wont to interpret the Divine counsels and judgments, seemed little better than a Brocken phantom—the grotesque and distorted image of its own authors, projected on mist and cloud, and hence very far from being the inscrutable teleology of Him whose glory it is to conceal a thing, and whose ways are often past finding out, because His understanding is infinite.

As Prof. Henry was a believer in theism, so also was he a believer in Revealed Religion—in Christianity. He had not made a study of systematic, or of dogmatic, theology, as they are taught in the schools, and still less was the interest he took in polemical divinity, but he did have a theology which, for practical life, is worth them all—the theology of a profound religious experience. He was a fresh illustration of Neander's favorite saying: *Pectus facit theologum*. The adaptation of the Christian scheme to the moral wants of the human soul was the palmary proof on which he rested his faith in the superhuman origin of that scheme. The plan had to him the force of a theory which is scientific in its exact conformity to the moral facts it explains, when these facts are properly known and fully understood.

Hence he was little troubled with the modern conflict between science and religion. History, as well as reason and faith, was

here his teacher. He saw that the Christian church had already passed through many epochs of transition, and that the friction incident to such transition periods had only brushed away the incrustations of theological error, and heightened the brightness of theological truth. In a world where the different branches and departments of human knowledge are not pushed forward *pari passu*—where “knowledge comes but wisdom lingers”—he held it nothing strange that the scientific man should sometimes be unintelligible to the theologian, and the theologian unintelligible to the scientific man. He believed, with the old Puritan, that “the Lord has more truth yet to break out of His holy word” than the systematic theologian is always ready to admit; and as the humble minister and interpreter of nature, he was certain that the scientific man has much truth to learn of which he is not yet aware. There must needs be fermentation in new thought, as in new wine, but the vintage of the brain, like the vintage of the grape, is only the better for a process which brings impurities to the surface, where they may be skimmed off, and settles the lees at the bottom, where they ought to be. It is under the figure of a vintage that Bacon describes the crowning result of a successful inductive process. When this process has been completed in any direction, it remains for a wider critical and reconciling philosophy to bring the other departments of knowledge into logical relation and correspondence with the new outlook that has been gained on nature and its phenomena.

Erasmus tells us in his *Praise of Folly*, mingling satire with the truth of his criticism, that in order to understand the scholastic theology of his day, it was necessary to spend six-and-thirty years in the study of Aristotle's physics, and of the doctrines of the Scotists. What a purification of method has been wrought in theology since the times of Erasmus! And for that purification the Church is largely indebted to the methodology of modern science, in clearing up the thoughts, and rationalizing the intellectual processes of men. The gain for sound theology is here unspeakable, and amply repays her for the heavy baggage she has dropped by the way at the challenge of science—baggage which only impeded her march, without reinforcing her artillery.

Hence, as a Christian philosopher, Prof. Henry never found it necessary to lower the scientific flag in order to conciliate an obscurantist theology, and he never lowered the Christian flag in

order to conciliate those who would erect the scientific standard over more territory than they have conquered. He had none of that spirit which would rather be wrong with Plato than right with anybody else. He wanted to follow wherever truth was in the van. But better than most men, I think, he knew how to discriminate between what a British scholar calls the duty of "following truth wherever it leads us, and the duty of yielding to the immediate pressure of an argument." He saw, as the same writer adds, that for whole generations "the victory of argument may sway backwards and forwards, like the fortune of single battles," but the victory of truth brings in peace, and a peace which comes to stay. He swept the scene of conflict with the field-glass of a commander-in-chief, and did not set up his trophies because of a brilliant skirmish on the picket lines of science. But he believed in the picket line, and rejoiced in every sharpshooter who fought with loyalty to truth in the forefront of the scientific army.

A man of faith, Prof. Henry was a man of prayer. But his views of prayer were perhaps peculiar in their spirituality. There was nothing mechanical or formal in his theory of this religious exercise. He held that it was the duty and privilege of enlightened Christians to live in perpetual communion with the Almighty Spirit, and in this sense to pray without ceasing. Work was worship, if conducted in this temper. He accepted all the appointments of nature and Providence as the expressions of Infinite Wisdom, and so in everything gave thanks.* He believed that

* The "sweet reasonableness" into which he had schooled his temper was manifested by the great trial which befell him in the year 1865, when the Smithsonian building suffered from the ravages of a fire, which destroyed all the letters written down to that date by Prof. Henry, as Smithsonian Secretary, in reply to innumerable questions relating to almost every department of knowledge. Besides, the Annual Report of the Institution in manuscript, nearly ready for the press, a valuable collection of papers on meteorology, with written memoranda of his own to aid in their digest, and countless minutes of scientific researches which he purposed to make, all perished in the flames. Yet he was more concerned about the loss of Bishop Johns's library, which had been entrusted to his care, than about the loss of his own papers and records. Referring to the latter in a letter written to his friend, Dr. Torrey, a few days after the fire, he held the following language: "A few years ago such a calamity would have paralyzed me for future efforts, but in my present view of life I take it as the dispensation of a kind and wise Providence, and trust that it will work to my spiritual advantage."

familiarity with the order of nature and scientific assurance of its uniformity need not and should not tend to extinguish the instinct, or abolish the motives of prayer by seeming to imply its futility, but should rather tend to purify and exalt the objects of prayer. The savage prays to his idol, that he may have success in killing his enemies. The Hottentot whips and worships his fetich in blind but eager quest of some sensual boon, that he may consume it upon his lusts. The prayers of the Vedic Books are the childish prayers of an unspiritual and childish people. "They pray," says Max Müller, "for the playthings of life, for houses and homes, for cows and horses, and they plainly tell the gods that if they will only be kind and gracious they will receive rich offerings in return." And do *we*, asks the critic of comparative religions, we Christians of this nineteenth century, "do we do much otherwise," if regard be had to the quality of *our* petitions? Prof. Henry held that it was both the duty and privilege of enlightened Christians to "do much otherwise," by praying preëminently, if not exclusively, for spiritual blessings. And hence he held that the highest natural philosophy combines with the highest Christian faith to transfer the religious thoughts, feelings, and aspirations of man more and more from things seen to things unseen, and from things temporal to things eternal. This view of his had nothing of quietism or of mysticism in it. Still less was it the expression of an apathetic stoicism. It was only the philosopher's way of praying to the great All-Father, in the spirit of St. Augustine, "*Da quod jubes, et jube quod vis.*"

I have made this reference to the opinions of Prof. Henry on the relations of science to religion, as also on the relations of natural philosophy to prayer, not only for the light they shed on the character of the man, but also for a reason which is peculiar to this Society, and which it may be a matter of interest for you to know. Immediately after his last unanimous election as the president of our Society, he communicated to me his purpose to make the relations of science and religion, as also the true import of prayer, the subject of his annual presidential address. He gave me an outline of the views he intended to submit, and I have here given but a brief *résumé* of them, according to my recollections of the colloquy, which was only one of many similar conferences previously had on the same high themes. He said that it would be, perhaps, the last time he should ever be called

to deliver a presidential address before the Society he so much loved, and that he wished to speak as became an humble patron of Science, believing fully in her high mission, and at the same time as an humble Christian, believing fully in the fundamental truths of Revelation. That he was not able to fulfil this purpose will be as much a source of regret to you as it is to me, but when I compare the valediction which it was in his heart to utter, with the peaceful end which came a few months later to crown his days with the halo of a finished life, I console myself with the thought that no last words of his were needed to seal on our hearts the lesson taught by his long and splendid career. Being dead he yet speaketh.

It is, indeed, the shadow of a great affliction which his death has cast upon our Society, but the light of his life pierces through the darkness, and irradiates for us all the paths of duty and labor, of honor and purity, of truth and righteousness, in which he walked with an eye that never blenched and a foot that never faltered. We shall not see his face any more, beaming with gladness and with the mild splendor of chastened intellect, but we shall feel his spiritual presence whenever we meet in this hall. We shall never hear his voice again, but its clear and gentle tones, as from yonder chair he expounded to us the mysteries of nature, will re-echo in the chambers of memory with only a deeper import, now that he has gone to join the "dead but sceptred sovereigns who still rule our spirits from their urns."

